

ADDITIONAL MANAGEMENT MEASURES FOR FORESTRY

1998 CONDITION: Within two years, Oregon will identify and begin applying additional management measures where water quality impairments and degradation of beneficial uses attributable to forestry exist despite implementation of the 6217(g) measures. (1998 Findings, Section X).

2015 FINDING: Oregon has not satisfied this condition. Therefore, Oregon has failed to submit an approvable program under CZARA.

BASIS FOR DECISION:

- January 13, 1998, Conditional Approval Findings:
 - NOAA and EPA noted that although Oregon's program includes management measures for forestry in conformity with the CZARA guidance, best available information indicates that existing water quality impairments are occurring due to forestry in certain areas and that existing FPRs are inadequate to restore water quality and fully support designated beneficial uses.
 - The agencies identified four areas where existing practices under the Oregon Forest Practice Act and rules should be strengthened to meet to attain water quality standards and fully support beneficial uses:
 - protect riparian areas for medium and small fish bearing streams, and non-fish bearing (type "N") streams;
 - protect high-risk landslide areas;
 - address the impacts of forest roads, particularly on so-called "legacy" roads; and
 - ensure adequate stream buffers for the application of herbicides, particularly on non-fish bearing streams.
- January 30, 2015, Determination: NOAA and EPA find that Oregon failed to adopt additional management measures to sufficiently address the four concerns identified in the 1998 conditional approval findings for the reasons stated below.

1. Protection of Riparian Areas

What Oregon Proposed:

- Regulatory: Riparian buffer/management requirements for fish-bearing streams (~20 ft no cut and harvest restrictions to ~50-70 ft from stream). No regulatory buffer requirements for non-fish streams (~60-70% of coastal nonpoint management area).
- Voluntary: Voluntary measures such as large wood placement, retaining additional basal area, and treating non-fish bearing streams as fish-bearing streams.
- Potential Rule Change: Board of Forestry is considering increasing riparian protection requirements for fish-bearing streams.

Why Oregon's Efforts Are Not Sufficient:

- A significant body of science, including state and ODF studies, clearly indicate that riparian protection around small and medium fish bearing streams and non-fish bearing streams in Oregon is not sufficient to protect water quality and beneficial uses.
 - For example: The 2011 ODF RipStream study found that FPA riparian protections on private forest lands did not ensure achievement of the Protection of Cold Water criterion (PCW) under the Oregon water quality standard for temperature.
 - Even the Board of Forestry has acknowledged current rules are not providing adequate protection for small and medium fish-bearing streams.
- Achieving proposed rule change would be an important accomplishment for Oregon but the rule must be adopted before it can count toward Oregon's coastal nonpoint program. NOAA/EPA are still unsure what the scope of final rule change will be or even if any change will be adopted.
- Oregon's buffer protections are also much less stringent than requirements for neighboring states and federal lands.

What the Agencies Recommend:

- Adopt rule change for fish-bearing streams as soon as possible.
- Identify and adopt additional management measures necessary to protect small non-fish bearing streams to ensure attainment of water quality standards and designated uses.

Potential Controversies:

- Fairly minimal for medium and small fish bearing streams since Oregon and the agencies are in agreement. Uncertain for non-fish bearing streams. ODF is not proposing to address these streams at this time. Non-fish bearing streams include 60-70% of coastal nonpoint management area). Could be fairly contentious.
- Forestry industry and a few other commenters cited results from a Watersheds Research Cooperative paired watershed study as evidence that the current FPA practices for riparian protection are effective at achieving water quality standards and protect designated uses.
 - Unpublished preliminary data shows that stream temperatures were variable and observed a net overall temperature decrease after clear-cut harvesting along non-fish bearing streams.
 - However, the variation in stream temperature and overall net observed temperature decrease may be attributable to increased slash debris along the stream after harvest, as well as a likely increase in stream flow post-harvest that could prevent an increase in temperatures and contribute to lower mean stream temperatures.

2. Forestry Roads

What Oregon Proposed:

- Regulatory: Board of Forestry has made several improvements to general road maintenance measures to improve water quality:
 - establishment of a “Critical Locations” policy to avoid building roads in critical locations such as high hazards landslide areas, steep slopes, or within 50 feet of waterbodies;
 - creation of additional rules to address wet-weather hauling; and
 - revision of an existing road drainage rule to reduce sediment delivery
- Voluntary: several different restoration and monitoring activities including:
 - OWEB voluntary Road Hazard and Identification and Risk Reduction Project where forestland owners survey road networks to identify roads that pose risks to salmonid habitat and prioritize roads for remediation. Oregon reports that thousands of road miles have been inspected and repaired across Oregon since the inception of this program in 1997.
 - Cooperative agreement with the USDA Forest Service to update the State’s GIS data layer for forest roads. The data layer will help Oregon conduct a rapid road survey to evaluate and prioritize road risks to soil and water resources.
 - Undertaking a third-party audit in 2014 to assess compliance with the FPA rules governing forest road construction and maintenance.

Why Oregon’s Efforts Are Not Sufficient

- New Regulatory Drainage Requirements: Requirements are triggered only when new road construction or re-construction of existing roads occurs. The rule changes and new policies do not sufficiently address water quality problems associated with “legacy roads” (e.g., roads that do not meet current state requirements with respect to siting, construction, maintenance, and road drainage).
- Voluntary Road Hazard/Identification Program: Oregon did not indicate the program’s impact within the coastal nonpoint program management area or how many of these projects addressed active forest roads and roads retired according to current FPA practices versus problems associated with older, legacy roads.
- Agreement with USDA to Update GIS Data Layers: Oregon submittal noted it hoped to begin survey in 2014; therefore this survey cannot count towards coastal NPS program until completed. Also, federal agencies are not aware if the survey and GIS layer will consider legacy roads or how Oregon will use the data to direct future management actions.
- Third-Party Audit: Issues resulting from legacy roads and general road maintenance issues where construction or reconstruction is not occurring would not be captured during compliance audit of FPA rules since these issues are outside the scope of rules.
- Oregon has not met CZARA requirements for voluntary programs.
- 2005 Oregon Coastal Coho Assessment by OWEB/ODFW shows that old roads make up majority of forest roads and exact road inventory on private land is not widely available.

- Science shows that old forest roads present greater sedimentation and landslide risk. For example, one study found that forestry roads in Oregon built before 1984, have higher landslide rates than those built later.¹
- Sedimentation and erosion from forestry roads have adverse impacts on salmon. For example, NOAA National Marine Fisheries Services' scientific analysis for their Endangered Species Act Section 7 listing for Oregon Coast Coho Salmon, continues to recognize forestry roads, including legacy roads, as a source of sediment and a threat to Oregon coastal coho salmon.

What the Agencies Recommend:

- Move forward with establishing road survey or inventory program that considers both active, inactive, and legacy roads. The program should establish a timeline for addressing priority road issues, including retiring or restoring forest roads that impair water quality, and a reporting and tracking component to assess progress for remediating identified forest road problems.
- Voluntary programs state Oregon has described may enable Oregon to meet this aspect of the condition but Oregon needs to meet all CZARA requirements for using voluntary programs; that is:
 - provide a commitment to use its back-up authority to ensure implementation of the forestry road additional management measures, when needed and
 - include a mechanism for tracking and monitoring implementation of these voluntary measures to carry out identified priority forest road improvements.

Potential Controversies

- Oregon notes that some legacy roads may have filled in with trees and other vegetation since being retired from active use; accessing some of these roads to repair them properly may create more disturbance and potential water quality impacts. While the Oregon's claim may be accurate in some cases, Oregon did not provide legacy roads inventory data of the coastal area to support its position.
- Some commenters did not feel the science supported NOAA and EPA's requirement for additional management measures for forestry to address road maintenance and legacy road issues. Forestry roads, including old roads, have not been linked to water quality impairments in Oregon's coastal nonpoint area.

Landslide Prone Areas

What Oregon Proposed:

- Regulatory: Amended FPA rules to require the identification of landslide hazard areas in timber harvesting plans and road construction and to place certain restrictions on harvest and road activities within these designated high-risk landslide areas for public safety.

¹ Oregon Department of Forestry and Oregon Department of Environmental Quality. 2002. Sufficiency Analysis: A Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality, Oregon Department of Forestry and Oregon Department of Environmental Quality, p. 33, Sessions, 1987.

- Voluntary: Promotes voluntary practice through Oregon Plan; gives landowners credit for leaving standing live trees along landslide-prone areas as a source of large wood.

Why Oregon's Efforts Are Not Sufficient:

- Regulatory Approach: Landslide hazards are addressed only as they relate to risks for losses of life and property, not for potential water quality impacts. Oregon still allows timber harvest and the construction of forest roads, where alternatives are not available, on high-risk landslide hazard areas as long as it is not deemed a public safety risk.
- Voluntary Approach: Practice is not designed to protect high-risk erosion areas but rather to ensure large wood is available to provide additional stream complexity when a landslide occurs. Also state has not met other CZARA requirements to use voluntary programs for its coastal nonpoint program.
- A number of studies continue to show significant increases in landslide rates after clear cutting compared to unmanaged forests in the Pacific Northwest. Research also shows that landslides degrade water quality and impair designated uses in Pacific Northwest streams.

What the Agencies Recommend:

- If Oregon plans to use voluntary approaches, it also needs to meet requirements to use voluntary programs. In addition to describing voluntary program:
 - describe how it will monitor and track implementation of that approach, and
 - provide a commitment to use its back-up authority, when needed.
- Establish a suite of measures to provide better protection of landslide areas. Examples include:
 - Adopt harvest and road construction restrictions similar to those applicable in areas where landslides pose risks to life and property, for all high-risk landslide prone areas with the moderate to high potential to impact water quality and designated uses.
 - Develop a scientifically rigorous process for identifying high-risk areas and unstable slopes based on field review by trained staff.
 - Develop more robust voluntary programs to encourage and incentivize the use of forestry best management practices to protect high-risk landslide areas that have the potential to impact water quality and designated uses, such as employing no-harvest restrictions around high-risk areas and ensuring that roads are designed, constructed, and maintained in such a manner that the risk of triggering slope failures is minimized.
 - Institute a monitoring program to track compliance with the FPA rules and voluntary guidance for high-risk landslide prone areas and the effectiveness of these practices in reducing slope failures.
 - Establish an ongoing monitoring program that assesses the underlying causes and water quality impacts of landslides shortly after they occur and generates

specific recommendations for future management. In particular, look for ways to reduce the occurrence of channelized landslides.

- Integrate processes to identify high-risk landslide prone areas and specific best management practices to protect these areas into the TMDL development process.

Potential Controversies:

- Some commenters did not feel the science supported NOAA and EPA's requirement for additional management measures for forestry to address landslide prone areas. Landslides due to forestry activities have not been directly linked to water quality impairments in Oregon's coastal nonpoint area.

Aerial Application of Herbicides

What Oregon Proposed:

- Regulatory:
 - Follows FIFRA label requirements.
 - ODF requires all pesticide applicators to complete a notification form of potential pesticides that may be applied.
 - ODF/ODA require pesticide applicators undergo training and obtain licenses. Training includes a review of regulations and requirements for protecting streams during aerial application. To reduce aerial drift, Oregon has guidance that instructs applicators to consider temperature, relative humidity, wind speed, and wind direction.
- Voluntary:
 - Water Quality Pesticide Management Plan: The plan is an interagency guide providing state-wide and watershed-level actions to protect surface and groundwater from potential impacts of pesticides, including herbicides. The plan, approved by EPA Region 10, describes a continuum of management responses, ranging from voluntary to regulatory actions the state could take to address pesticide issues. The plan focuses on using water quality monitoring data as the driver for adaptive management actions.
 - Pesticide Stewardship Partnership: Pilot pesticide water quality monitoring effort. ODEQ works with State and local partners to collect and analyze water samples and use the data to focus technical assistance and best management practices on streams and pesticides that pose a potential aquatic life or human health impact.

Why Oregon's Efforts Are Not Sufficient

- January 13, 1998, conditional approval findings noted that Oregon had published forest practices rules that require buffer zones for most pesticide applications. However, these rule changes did not address aerial application of herbicides along non-fish bearing streams. NOAA and EPA determined that stream spray buffers for the aerial application of herbicides on non-fish bearing streams on forestlands were

inadequate and should be strengthened to attain water quality standards and fully support beneficial uses.

- Within the coastal nonpoint management area, non-fish bearing streams comprise 60 to 70 percent of the total stream length.
- Oregon does not require riparian buffers during forest harvests along non-fish bearing streams, which might otherwise provide a spray buffer. Furthermore, there are no riparian buffers to filter herbicide-laden runoff before it enters the streams.
- Given the lack of monitoring for aerial application of herbicides on non-fish bearing streams in Oregon's coastal forestlands and the potential for adverse water quality and designated use impacts from the aerial application of herbicides, Oregon should take additional steps to ensure non-fish bearing streams are adequately protected during the aerial application of herbicides.
- NMFS BiOp for several EPA herbicide labels, including 2,4-D, identifies aerial drift as the most likely pathway for these herbicides to enter aquatic habitats. The BiOp notes that a decrease in primary production can have significant effects on consumers that depend on the primary producers for food. These effects often are reported at herbicide concentrations well below concentrations that would have a direct effect on consumers. NMFS concluded that products containing 2,4-D are likely to jeopardize the existence of all listed salmonids and adversely modify or destroy critical habitat. Products containing diuron were also likely to adversely modify or destroy critical habitat, but not likely to jeopardize listed salmonids.
- FIFRA: EPA, NMFS, USFWS and USDA are working to improve the national risk assessment process for pesticide labels. Given the scale of this undertaking, don't expect to update herbicide labels for ~ 15 yrs. Ongoing federal process, however, should not preclude Oregon from making needed state-level improvements to how it manages herbicides in the context of its forestry landscape and sensitive species.
 - Oregon and other Pacific Northwest states have already recognized the need to go beyond the national FIFRA label requirements. Neighboring states have stricter buffer requirements for herbicides application along non-fish bearing streams:
 - Washington: 50 ft. riparian and spray buffer
 - Idaho: 100 ft. riparian and spray buffers.
 - California: has riparian buffers for non-fish bearing streams, which implicitly restrict the aerial application of herbicides near the stream.
- ODF's Notification Form: The form does not include guidance for spraying over non-fish bearing streams. Also allows for applicator to list many possible pesticides so it is difficult to determine which pesticide is actually applied.
- Water Quality Pesticide Management Plan and PSP: Water quality monitoring data on pesticides is still limited in Oregon. Oregon has only established eight pilot PSP monitoring areas in seven watersheds, none of which are within the coastal nonpoint management area. Difficult to operate an adaptive management-driven program if you lack data to know when adjustments are needed.

What the Agencies Recommend:

- Could adopt regulatory changes to institute spray buffers for the aerial application of herbicides along non-fish bearing streams similar to neighboring states and/or institute riparian buffers along non-fish bearing streams, which, by default, would also provide a buffer during aerial application.
- Should develop and maintain more robust and targeted studies of the effectiveness of its pesticide monitoring and best management practices within the coastal nonpoint management area. Oregon should design its monitoring program in consultation with EPA and NMFS so that it generates data that are also useful for EPA pesticide registration reviews and NMFS biological opinions that assess the impact of EPA label requirements on listed species.
- Could institute voluntary programs, backed by enforceable authorities. Elements of the voluntary program could include:
 - Develop more specific guidelines for voluntary buffers or buffer protections for the aerial application of herbicides on non-fish bearing streams;
 - Educate and train aerial applicators of herbicides on the new guidance and how to minimize aerial drift to waterways, including non-fish bearing streams and surrounding communities;
 - Revise the ODF Notification of Operation form required prior to chemical applications on forestlands to include a check box for aerial applicators to indicate they must adhere to FIFRA labels for all stream types, including non-fish bearing streams;
 - Track the implementation of voluntary measures for the aerial application of herbicides along non-fish bearing streams and assess the effectiveness of these practices to protect water quality and designated uses;
 - Conduct direct compliance monitoring for FIFRA label requirements related to aerial application of herbicides in forestry;
 - Provide better maps of non-fish bearing streams and other sensitive sites and structures to increase awareness of these sensitive areas that need protection among the aerial applicator community; and
 - Employ GPS technology, linked to maps of non-fish bearing streams to automatically shut off nozzles before crossing non-fish bearing streams.
- If Oregon chooses to pursue voluntary programs, Oregon would need to meet all CZARA requirements for voluntary programs:
 - describe the process the state will use to monitor and track implementation of the voluntary practices, and
 - demonstrate a commitment to use the back-up authority.

Potential Controversies

- Monitoring studies on the impacts of aerial application of herbicides over non-fish bearing streams in Oregon's coastal nonpoint are very limited. A few studies for fish bearing streams only observed herbicide concentrations well below reported toxic thresholds. One study that sampled at the non-fish/fish-bearing interface also observed herbicide levels well below reported toxic thresholds. Some commenters

and the state have pointed to these studies as evidence that science doesn't support the need for this additional management measure.

- Oregon claims to be following EPA label requirements under FIFRA. If EPA doesn't think that's sufficient for CZARA purposes, the state believes it's EPA's responsibility to change the label requirements. Federal agencies shouldn't tell the state to do more unless they also take action.

OPTIONS FOR TAKING ACTION

Option 1: Make Disapproval Decision; NOAA/EPA Withhold FY15 Funding Per NWEA Request

Pros:

- Supported by technical studies and analysis of programs in the context of CZARA guidelines.
- Consistent with 12/20/13 Notice of Intent to disapprove, including consideration of public comments and state submittals.
- Insufficient scientific information to justify approval of Coastal Nonpoint Program.
- Allows agencies to adhere to revised settlement deadlines.
- Consistent with the agencies' records on interim decisions pertaining to Oregon's program and programs nationwide.
- Provides opportunity to work with Oregon to reasonably and feasibly improve its Coastal Nonpoint Program resulting in major environmental benefits.

Cons:

- Takes funding away from Oregon at a critical time.
 - Loss of funding could reduce momentum from the forest riparian rule change that is underway (achieving strong riparian rule is needed for CZARA approval and would be a huge achievement for Oregon to improve water quality protection.)
 - Decreases ability of Oregon Coastal Management Program to maintain core program functions including those state staff that are working to improve Oregon's CZARA program.
 - Results in less funding for and fewer water quality and salmon habitat restoration projects.

Option 2: Makes Approval Decision and NOAA/EPA Does Not Withhold FY15 Funding

Pros:

- Adheres to statutory language (except timeframe).
- Preserves funding to the state.

Cons:

- Technical analysis and scientific studies do not support approving the program.
- Vulnerable to lawsuits from NWEA and other groups.
- Legal risk of being arbitrary and capricious as decision is not consistent with the record or with how NOAA and EPA evaluated other state programs.
- Reduces incentive to move quickly with forest riparian rule.

- Contradicts other state and federal findings that current Oregon forest practices may be harming water quality and salmon habitat that could undermine other agency recommendations/actions seeking to improve these practices.

Option 3: NOAA/EPA Delays Taking Action and NOAA/EPA Does Not Withhold FY15 Funding.

Pros:

- Does not set precedent for other conditionally approved states.
- Oregon can continue to receive funding to help address remaining issues.

Cons:

- EPA and NOAA are on schedule to meet the January 30, 2015 deadline and has indicated that to the State and in progress reports to NWEA. Difficult to provide programmatic or scientific rationale for the delay.
- Delaying action may put the State, EPA, and NOAA in limbo re: our determination, what the State should do, and next steps.
- Legal risk of future lawsuits, including NWEA reinitiating its lawsuit.
- Failure to comply with settlement agreement commitments (and with renegotiated deadline) shows bad faith, which could undermine use of settlement agreements in the future.

Option 4: Make Disapproval Decision and Postpone NOAA/EPA Withhold Funding for a Specified Period of Time

Pros:

- Supported by technical studies and analysis of programs in the context of CZARA guidelines.
- Consistent with 12/20/13 Notice of Intent to disapprove, including consideration of public comments and state submittals.
- Insufficient scientific information to justify approval of Coastal Nonpoint Program.
- Allows agencies to partially adhere to revised settlement deadlines.
- Consistent with the agencies' records on interim decisions pertaining to Oregon's program and programs nationwide.
- Provides opportunity to work with Oregon to reasonably and feasibly improve its Coastal Nonpoint Program resulting in major environmental benefits.
- Possibly provide incentive for Oregon to move quickly to address deficiencies.
- Does not take away funding from Oregon at a critical time.

Cons:

- Not clear this is a legally viable option.
- Deals not address the ramifications to Oregon on being the first disapproved program in the nation.

- Difficult to determine what amount of time is needed in order to Oregon to address the deficiencies.